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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,299	11/10/2003	Joshua C. Liu	370041-00006	5219

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EXAMINER	
KENNY, STEPHEN	
ART UNIT	**PAPER NUMBER**
3726	

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,299	LIU ET AL.	
	Examiner	Art Unit	
	Stephen J Kenny	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) *46-61* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-45, drawn to a method of manufacturing a roller, classified in class 29, subclass 895.

II. Claims 46-61, drawn to a method of repairing a roller, classified in class 29, subclass 401.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the method of Group I does not require providing an existing roller and removing a work surface. The subcombination has separate utility such as it can be applied to pre-existing rollers to refabricate or resurface them thereby extending their service life.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with David Maivald on July 27, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-45. Affirmation of this election must be made by applicant in replying to this Office action. Claims

46-61 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-6, 8, 10-12, 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lauener (US Patent No 4944342).

Regarding claim 1, Lauener discloses providing a cylindrical roll core (8) having a central longitudinal axis; forming a plurality of longitudinally extending cooling passages (26) in the roll core proximate to the surface of the roll core for conducting a cooling medium through the roll core to cool the roll during use; and forming a metal overlay (or "shell) (7) on the roll core (8) (see Figure 2, & column 3, lines 48-51).

Regarding claims 3-6, 10-11, & 14-15, Lauener discloses forming cooling passages (26) spaced regularly & parallel about the central longitudinal axis of the roll core (8); perpendicular cooling passages (22, 25); and acute angle passages (23, 24); although Lauener does not explicitly disclose forming the holes by drilling, it is inherent that such holes/passages be formed in this manner since drilling is the only viable machining operation for producing holes/passages in dense roller cores. (Further support of this inherency can be found in Hawes et al. US Patent No 5279535 column 1, line 52).

Regarding claims 8, 12, Lauener discloses the roll core (8) defining a centrally located longitudinally extending inlet & outlet passages (15, 16), and forming a plurality of radially extending passages (22-25) in the roll core to connect the cooling passages to the inlet & outlet passages (Figure 2).

Claims 16, 18-21, 23, 25-27, 29-31, 33-36, 38, 40-42, 44-45, are rejected under 35 U.S.C. 102(b) as being anticipated by Delassus et al. (US Patent No 5839501).

Regarding claims 16, 31 Delassus discloses providing a cylindrical roll core having a central longitudinal axis; forming an overlay (37) on the roll core; and forming a plurality of longitudinally extending cooling passages (32) in the overlay for conducting a cooling medium through the overlay to cool the roller. In further regards to claim 31, the applicant states in paragraph 0071 that an additional overlay is merely a design choice and does not affect the operation of the roller, and therefore is not considered to patentably distinguish over the roller/overlay disclosure of Delassus. Additionally, the roller/overlay of Delassus is clearly capable of receiving additional layers of overlay if so desired.

Regarding claims 18-20, 23, 25-27, 29-30, 33-35, 38, 40-42, 44-45, Delassus discloses forming cooling passages in the overlay (32) spaced regularly & parallel about the central longitudinal axis of the roll core; perpendicular cooling passages (8, 53); and acute angle passages (7, 8, 54); and a centrally located inlet passage (27, 71); although Delassus does not explicitly disclose forming the holes by drilling, it is inherent that such holes/passages be formed in this manner since drilling is the only viable machining operation for producing holes/passages in dense roller cores. (Further support of this inherency can be found in Hawes et al. US Patent No 5279535 column 1, line 52).

Regarding claims 21, & 36 Delassus discloses attaching end caps to opposite ends of the roll body to close the ends of the cooling passages (28 in Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 17, & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener (as applied to claim 2), or Delassus (as applied to claims 17 & 32) in view of Schroder et al. (US Patent No 5902685).

Lauener & Delassus disclose the claimed invention except for forming the overlay/shell (7) by any of the specific methods claimed.

Schroder discloses applying material to a roll core via arc melding (column 6, lines 46-50) which is known to provide advantageous thermal welding characteristics; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a metal overlay as disclosed by Lauener or Delassus, by arc welding as taught by Schroder in order to realize these advantages. Furthermore, it would have been an obvious matter of design choice to form the overlay/shell by any of the claimed methods since applicant has not disclosed that such methods solve any stated problem or is for any particular purpose. As applicant states on page 12 paragraph 0058 that the claimed methods are merely the "preferred" methods, thereby indicating that other methods are acceptable to perform the invention.

Claims 7, 22, & 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener (as applied to claim 7); and Delassus (as applied to claims 22, & 37); in view of Jachowski et al (US Patent No 4844747).

Lauener (claim 7), & Delassus (claim 22), discloses the claimed invention except for heat-treating the roll.

Jachowski discloses heat treating (i.e. annealing) the roll (column 2, lines 60-64). Annealing a roller is advantageous in that it relieves any residual stresses caused during formation of the roller. This helps reduce any eccentricity in the roller. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a roller as disclosed by Lauener or Delassus, and heat treating the roller as disclosed by Jachowski, in order to realize the advantages discussed above.

Claims 9, 13, 24, 28, 39, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauener (applied to claims 9, & 13); and Delassus (applied to claims 24, 28, 39, 43) in view of Hartz (US Patent No 5598633).

Lauener (claims 9, & 13) & Delassus (claims 24, 28, 39, 43), disclose the claimed invention except for explicitly stating that the channels are plugged prior to forming the overlay/shell.

Hartz discloses plugging the channels prior of a roll core prior to forming the overlay (column 3, lines 2-5). The plugging of the channels is advantageous in that it prevents any clogging of the channels during fabrication of the overlay, thus ensuring an unimpeded flow of coolant during operation. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a roll core as disclosed by Lauener or Delassus while plugging the channels prior to forming the overlay/shell as taught by Hartz in order to afford the advantages discussed above.

Claim Rejections - 35 USC § 103

In alternative to the U.S.C. 102 rejection set forth above, claim 31-45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Delassus.

Regarding claim 31, Delassus discloses the claimed invention except for explicitly stating that a second overlay could be formed on top of the first overlay (37). As applicant states in paragraph 0071 this second overlay is not a critical feature necessary to perform the invention, nor is it the novel feature of the invention. A second overlay is merely a design choice for an alternative embodiment. Given the disclosure of Delassus, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to form additional overlays on the first overlay (37) in order to enhance the rigidity/strength of the roller, so as to extend its service life. In the event that applicant traverses this rejection, stating that the second overlay is a patentably distinct configuration, claims 31-45 will be restricted.

Claims 32-45 stand rejected for the reasons set forth above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J Kenny whose telephone number is 703-306-0359. The examiner can normally be reached on mon - fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sk

8/9/04

DAVID P. BRYANT
PRIMARY EXAMINER